EMERGENCY RESPONSE DIRECTORY AND UPDATE RECORD

SECTIONS	LAST UPDATE
Emergency Response Directory and Update Record	9 Feb. 01
Chapter One	9 Feb. 01
1.1 CDF Documents	
1.2 CDF ERP Maintenance	
1.3 CDF ERP Format	
1.4 Training	
2 FIRE	
2.1 CDF Fire Alarm	9 Feb. 01
3 FLAMMABLE GAS	
3.1 Assembly Building	9 Feb. 01
3.2 Collision Hall	9 Feb. 01
3.3 Gas Shed	9 Feb. 01
3.4 Inerting Alarm	9 Feb. 01
4 ODH	
4.1 Assembly Building - Shield Door Closed	9 Feb. 01
4.2 Collision Hall - Shield Door Closed or	9 Feb. 01
Assembly Building 1200 Ton Shield Door Open	9 Feb. 01
5 RADIATION EXPOSURE	
5.1 Beam-on Radiation Exposure	9 Feb. 01
6 SPILLS & LEAKS	9 Feb. 01
7 SEVERE WEATHER	9 Feb. 01
8 RECOVERY	9 Feb. 01
8.1 CDF Recovery	
9 MISCELLANEOUS	
9.1 Extra Forms	
9.2 Maps	
CDF	
CDF Port-A-Kamps	

CDF EMERGENCY RESPONSE PROCEDURES
Feb. 9, 2001

Hand-Processed Changes

HPC Number	Date	Type	Section Number	Initials
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
8.	_____	_____	_____	_____
9.	_____	_____	_____	_____

Type of HPC Changes

1. Editorial
2. Procedural

_____

CDF Operations Department Approval Date

_____

Particle Physics Division Approval Date

_____

Beams Division Approval Date

The Sci Co (scientific cooridinator) is responsible for the implementation of these procedures. In the event that the Sci Co is responding to an alarm and a second alarm occurs the ACE must notify the Sci Co of the second alarm. Co's will be assigned as needed to assist in ERP.
Aces and Sci Co's are trained in this procedure.

1.1 CDF Reference Documents

The following books and manuals explain safety practices, provide help and offer procedures for use in the CDF experimental area.

1.1.1 Emergency Response Procedures (ERP)

This book contains flow chart responses to the following emergencies: Fire, ODH, Radiation Exposure, Spills and Leaks, and Flammable Gas. Also contained in this book are the various forms to be filled out (depending on the type of emergency) and maps of the assembly and collision halls.

1.1.2 Fermilab Emergency Plan

The Fermilab Emergency Plan sets forth the emergency organization and outlines the responsibilities of each echelon of the emergency organization. The plan also states the responsibilities and capabilities of support groups and indicates what equipment and services are available in the event of an emergency.

1.1.3 Fermilab ES&H Manual

The Fermilab ES&H Manual contains policies, program descriptions, and procedures needed to achieve personnel safety and protection of the environment while at the same time making the best use of laboratory facilities. All Fermilab employees, users, and subcontractor personnel are expected to become acquainted with Fermilab's safety program and adhere to it.

1.1.4 Fermilab Radiological Control Manual

Fermilab's Radiological Control Manual contains information about radiation emergencies, general information, rules and regulations, dosimetry, monitoring devices, sources, exposure control, contamination control, materials in Wilson Hall, radioactive material movement, radiation interlocks, exposure investigation, hadron shielding, environmental monitoring, and radiation safety training.

1.1.5 Particle Physics Division Operating Manual

Policies contained within this manual describe management decisions by the Particle Physics Division head which: * Are not sufficiently described or detailed by lab-wide policy manuals * Define roles, responsibilities, and

authorities of specific job titles * Impose more restrictive administrative controls on certain tasks or limits.

1.1.6 CDF Operating Guidelines

This CDF-controlled binder documents and outlines the operating procedures, mechanisms for altering procedures, and other policies and guidelines used for the safe operation of the CDF experimental area.

1.2 CDF ERP Maintenance

This document outlines how Emergency Response Procedures are made and placed in the ERP binder, the mechanisms for altering these procedures, and the policies and guidelines for the safe operation of Particle Physics Division's CDF experimental area. The CDF ERP is maintained by the CDF Operations department (COD).

1.2.1 Controlled Copies

There are 4 controlled copies of the PPD/CDF Emergency Response Procedures (PPD/CDF ERP). They are located in the CDF control room, the CDF assembly building west command post, and the CDF Operations Department Office and on the CDF Web Page.

1.2.2 Informational Copies

All copies other than the listed controlled copies are considered informational copies. These copies are not to be considered current procedures. They are clearly labeled "INFORMATIONAL COPY". CDF is not responsible for the maintenance or updating of Informational Copies, although updates will be sent to known Informational Copy holders.

1.2.3 Adding procedures to the ERP

1.2.3.1 Procedures added to the ERP will follow the format described in PPD/CDF ERP 1.3 section titled 'Procedure Format.

1.2.3.2 All additions to the ERP must be approved by Particle Physics Division Office, after being reviewed by PPD/CDF Operations Department, PPD/ES&H Department, BeamsDivision, and other departments deemed necessary by the Particle Physics Division Office.

1.2.3.3 Add the new procedures title to the table of contents. Place your initials and the date near the new title.

1.2.4 Mechanisms for Changing Procedures in the ERP

1.2.4.1 All changes to the ERP, except editorial changes, must be approved by Particle Physics Division Office, after being reviewed by PPD/COD, PPD/ES&H Department, and other departments deemed necessary by the Particle Physics Division Office. (The CDF Operations Department Head should be notified, so that a new procedure can be written and approved.)

1.2.4.2 Editorial changes need only a Operations Managers review.

1.2.4.3 New text will be placed as near the old text as possible. Strike out the old text with a single line. Place your initials and the date near the change.

1.2.4.4 Deleted text will be crossed out with a single line. Place your initials and the date near the deletion.

1.2.4.5Hand-Processed Changes (HPC)

The HPC entry allows changes to be made to an existing procedure and also allows the altered procedure to remain in effect. The COD Head should be notified of any changes so the procedure can be re-written and approved.

1.2.4.6 Types of Hand-Processed Changes:

a) Editorial

An editorial change is one that corrects grammar or spelling. The error is crossed out with a single line and the correct information placed as near to the error as possible. Care must be taken that the intent of the procedure is not changed.

Approval: Editorial changes require Operations Manager review.

b) Procedural

An immediate procedural change must be made with the agreement of the Operations Manager or their designee. A SO or RSO may orally request that an Operations Manager make a permanent change to a procedure. (Please note in the logbook if it was an oral request.) If parts of the procedure are

being changed or deleted, those parts will **be crossed out** with a single line. If new information is being added, it should be written as close as possible to where it applies. This Hand-Processed Change will allow the existing procedure to be used as modified until a new approved procedure can be re-written and issued. The CDF Operations Department (COD) Head should be notified of any changes so the procedure can be re-written and approved.

Approval - Procedural changes must be approved by Particle Physics Division Office, with concurrence of COD Office. These changes may be orally approved. (Please note in the logbook if the change was orally approved.)

1.3 CDF ERP Format

All CDF Emergency Response Procedures will adhere to the format described in this document.

1.3.0 The Procedure Format

Procedures will be in flowchart form if appropriate. The document should be in a font type that is easy to read and approximately 12 pt. in size. The following explains the required format.

1.3.1 Header

The header contains two parts. The first part is the name of the procedure in capitalized letters. Secondly, the header contains the date the finished procedure was written.

1.3.2 Procedure

The Procedure is a flowchart of the steps to be followed toward a particular course of action.

1.3.3 Text

BLACK - text describes the actions that trained people should follow to carryout the procedure.
RED - text describes Warnings.
BLUE - text is information only and describes automatic actions.
GREEN - text is information only and describes actions that experts might take.

1.4 TRAINING

This section describes training requirements on the contents of the Emergency Response Procedures (ERP) as conducted be CDF.

l.4.1 ERP Training Responsibilities

The PPD/COD is responsible for training on CDF-specific Emergency Response Procedures. These include Fire, Flammable Gas, ODH, Spills and Leaks.

1.4.2 ERP Training Documentation

There is a sign-off sheet for each chapter in the ERP. The sign-off sheet has spaces for the trainer's name, the trainee's name, the trainee's written signature and ID number, and the date of training. Trainers and trainees will use the sign-off sheets to document that training has been given and received. The PPD/CDF Operations Department is the custodian of the training sign-off sheets for which they are responsible. The CDF Operations Department is the custodian of the training signoff sheets for which they are responsible.

1.4.3 ERP Training

a) Trainees will receive handouts of each procedure. b) Supplemental training information will be handed out with each procedure. c) The procedure's use will be explained and its logic stepped through. d) Each procedure will be explained and discussed.

1.4.4 Frequency of Training

Training will be given on CDF ERPs before beginning a new collider run, whenever new procedures are issued, and when procedures are reissued.

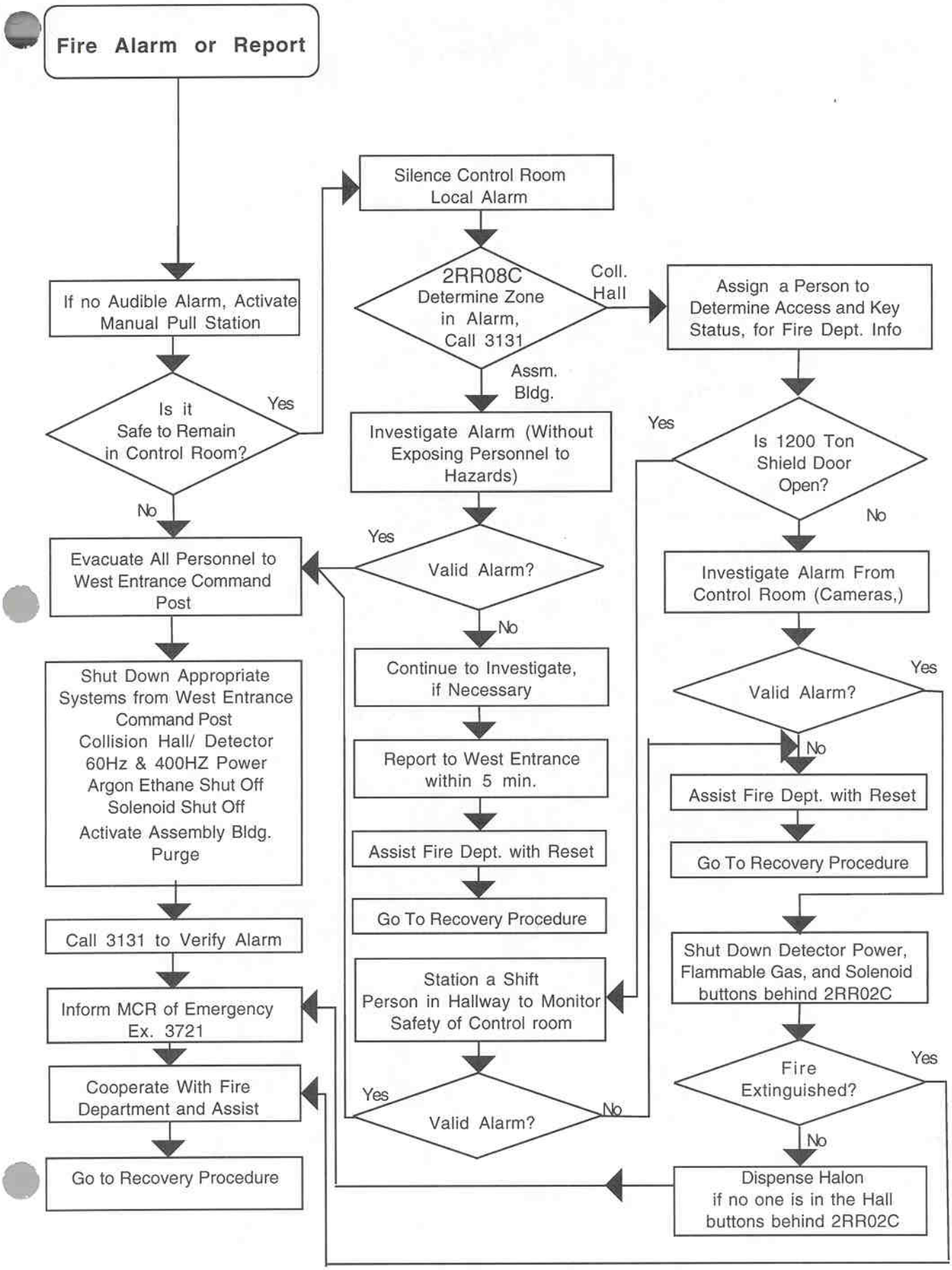
New Procedures, Procedural Changes, Deletions

The COD Heads will designate a trainer for new procedures. As new procedures are implemented, new sign-off sheets will be created. All procedural changes will be treated as "New Procedures" as far as training and sign-off sheets are concerned. If a procedure is deleted, the COD will make a point of informing the trainees.

WARNING:
Exit Building if
You Feel at Risk

CDF Fire Alarm

WARNING:
Do Not Enter Collision Hall

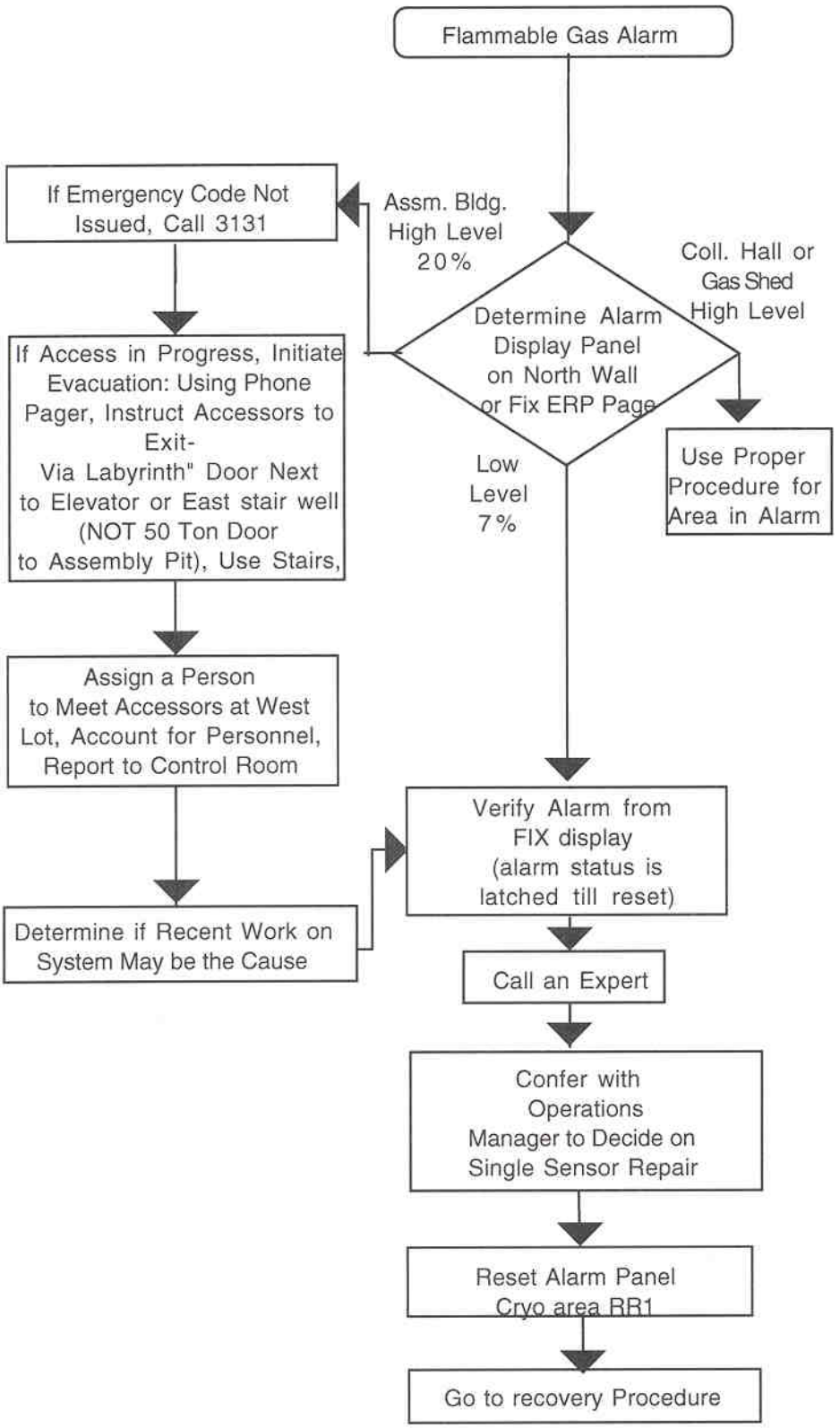


Feb. 9, 2001

WARNING:
Experts Investigating
Must Wear Dual Function
Gas Monitors and Leave
Area if Monitor Alarms

CDF Flammable Gas
Assembly Building

WARNING:
Two Man Rule in Effect



Expert Investigators can do the following:

A. Investigate Alarm Further Without Exposing Personnel to Hazards

B. Determine Leak Validity and Severity at Zone Indicated Using a TIF-8800 (red) Flammable Gas Detector or by Investigating Nitrogen Purge System

C. Close Manual Gas Supply Valve MV-2405 if High Level Alarm
In gas Shed Key is needed

Automatic Actions

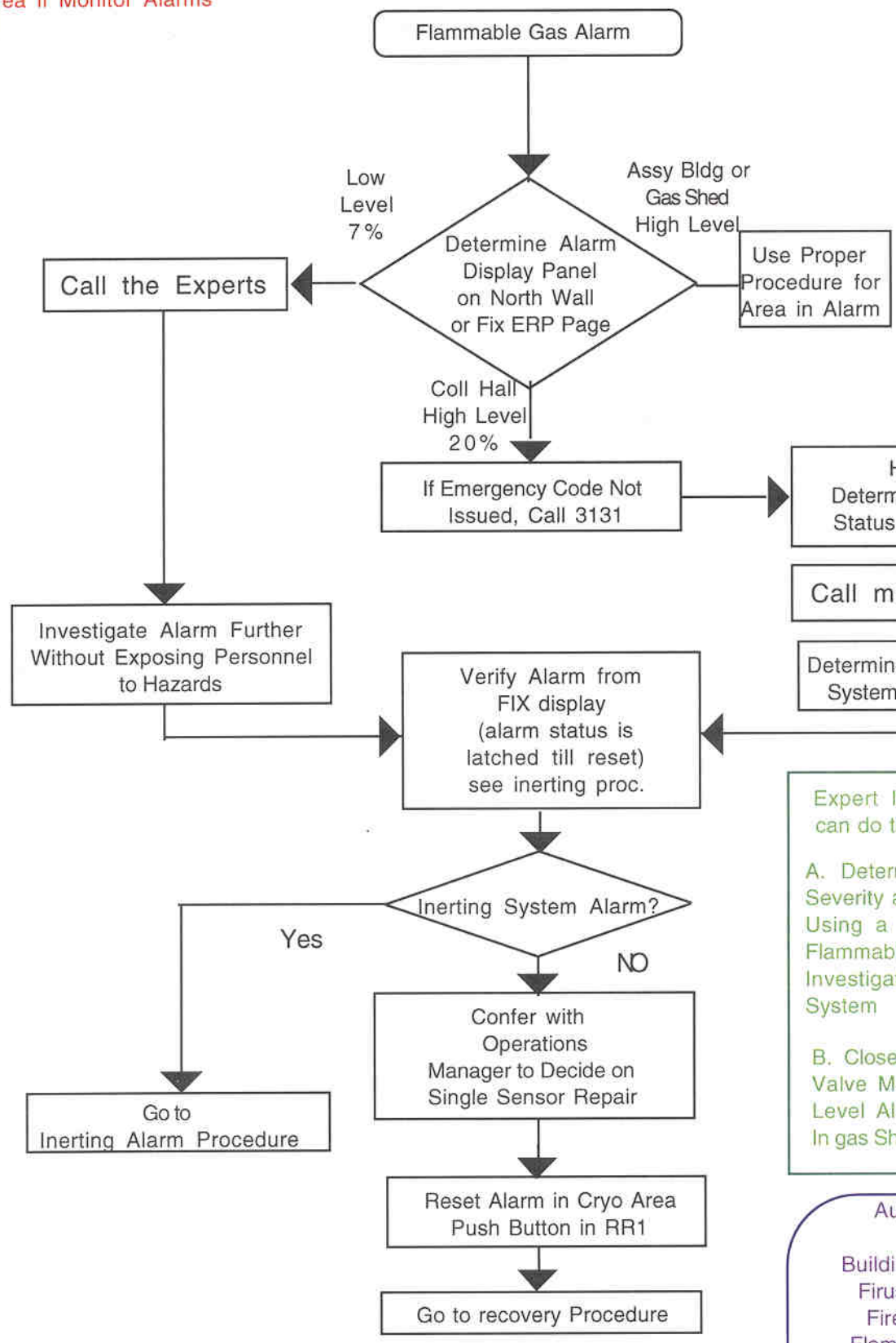
Building Evacuate Alarm
Firus Message Issued
Fire dept. Responds
Flammable Gas Shutoff
High Voltage Shutoff
MG 1,2,3&4 Shutoff
Detector 60 Hz Shutoff
Assy. Bldg. Ventilation Purge

Feb. 9, 2001

WARNING:
Experts Investigating
Must Wear Dual Function
Gas Monitors and Leave
Area if Monitor Alarms

CDF Flammable Gas Collision Hall

WARNING:
Two Man Rule in Effect



Expert Investigators can do the following:

A. Determine Leak Validity and Severity at Zone Indicated Using a TIF-8800 (red) Flammable Gas Detector or by Investigating Nitrogen Purge System

B. Close Manual Gas Supply Valve MV-2405 if High Level Alarm
In gas Shed Key is needed

Automatic Actions

Building Evacuate Alarm
Firus Message Issued
Fire dept. Responds
Flammable Gas Shutoff
High Voltage Shutoff
MG 1,2,3&4 Shutoff
Detector 60 Hz Shutoff
Coll Hall. Ventilation Purge

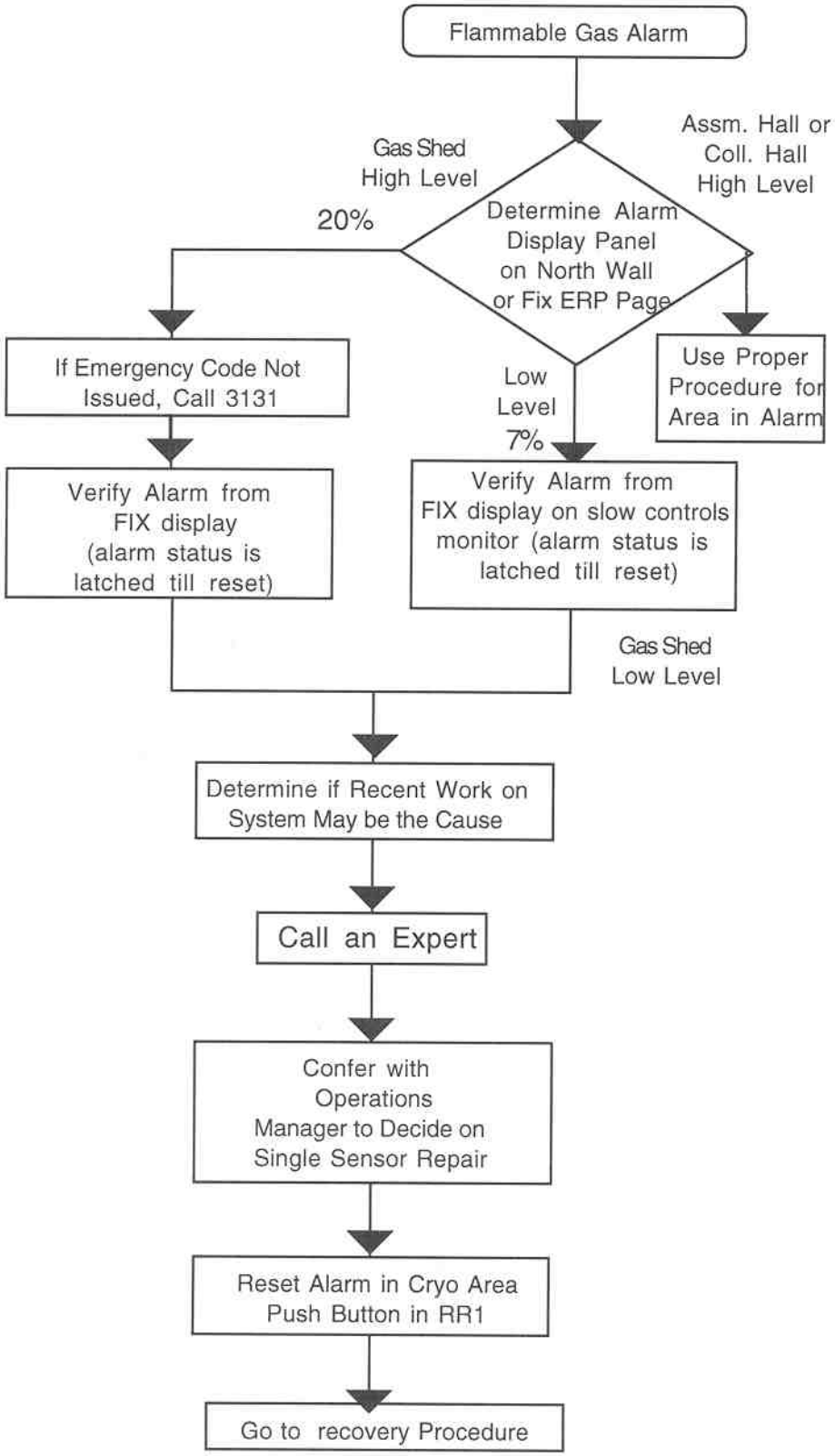
Feb. 9, 2001

WARNING:
Experts Investigating
Must Wear Dual Function
Gas Monitors and Leave
Area if Monitor Alarms

CDF Flammable Gas

WARNING:
Two Man Rule in Effect

Gas Shed



Expert Investigators can do the following:

A. Determine Leak Validity and Severity at Zone Indicated Using a TIF-8800 (red) Flammable Gas Detector or by Investigating Nitrogen Purge System

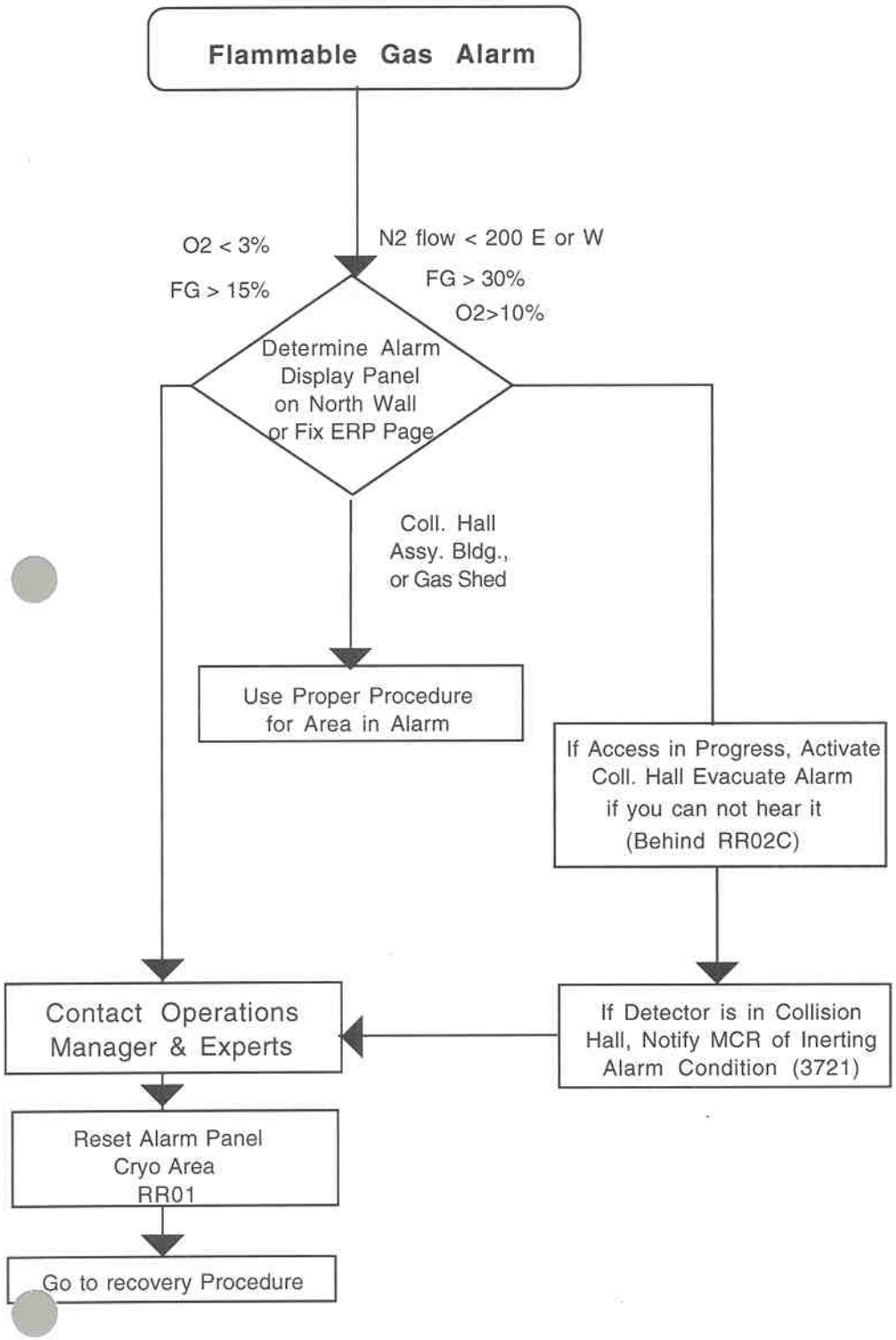
B. If Appropriate, Shut Down Gas System Compressor Crash Button is outside East side next to Gas Shed Gate

Automatic Actions:

Firus Message Issued
Fire Dept. Responds
Flammable Gas Shutoff

Feb. 9, 2001

CDF Flammable Gas
COT Inerting Alarm



Expert Investigators can do the following:

A. Check730' Platform Nitrogen Flow Valid Alarm: Station 10 COTE & COTW. Alarm will sound if either Dwyer Guage <200 CFH

B. Check RRG04 to Verify Sample Draw Pump is Operating & O2 Monitor Flow Rates are:
Sample = 50 SCFH
Air Flow = 12 SCFH

C. Verify Nitrogen Supply is Normal (Tank #32 > 36 PSIG & Tank #18 > 40 PSIG)

Shift Crew Can

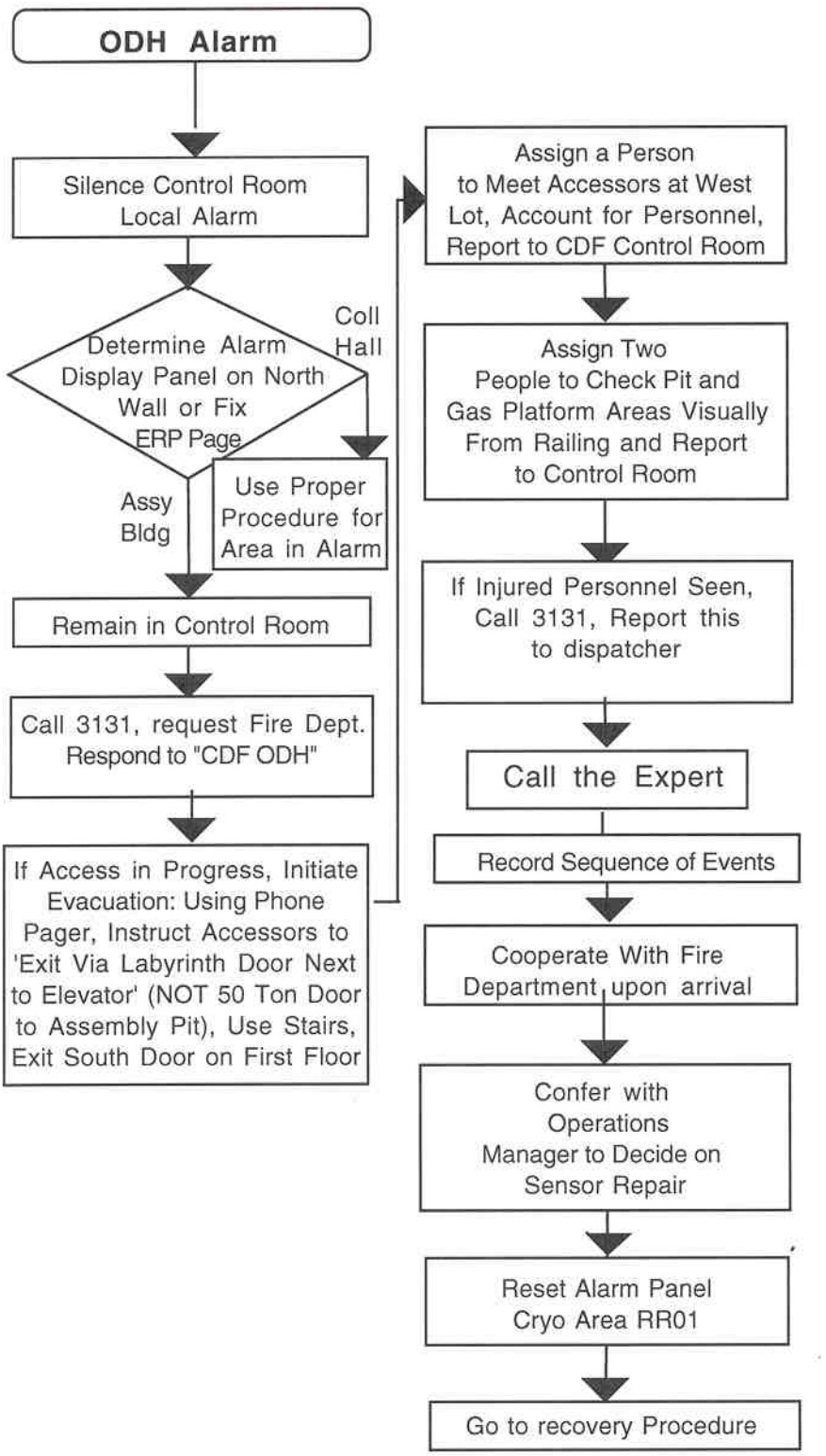
Verify
COT Inerting E or W Flow switchs on FIX display Alarms Page

Verify Flam Gas Sensor Values Readings on FIX Display
Low Alarm ≥ 15%
High Alarm ≥ 30%

Feb. 9, 2001

CDF ODH Alarm
Assembly Building
1200 Ton Shield Door Closed

WARNING: Do Not Enter Deep Pit



Expert Investigators can do the following:

Check Alarm at Cryo Area Rack #1

Investigate Further:
1. Check for Other Alarms
2. Determine if Recent Changes are Cause From Fix
3. Have Person Check PF1,
4. Have Person Check Cryo Syst Readbacks

Alarm is Valid if any of the following are true:
1. Vapor Cloud or Broken Line Seen
2. More than One Sensor Indicates Latched Alarm
3. Latched Sensor Non-Normal Reading Persists
4. All Access Keys Cannot Be Accounted For (Unless Assembly Pit is Not Part of Access Area)

If Valid Alarm is Only One Non-Normal Sensor And No Other Confirming Evidence is Found, Alarm is Declared False

Automatic Actions:

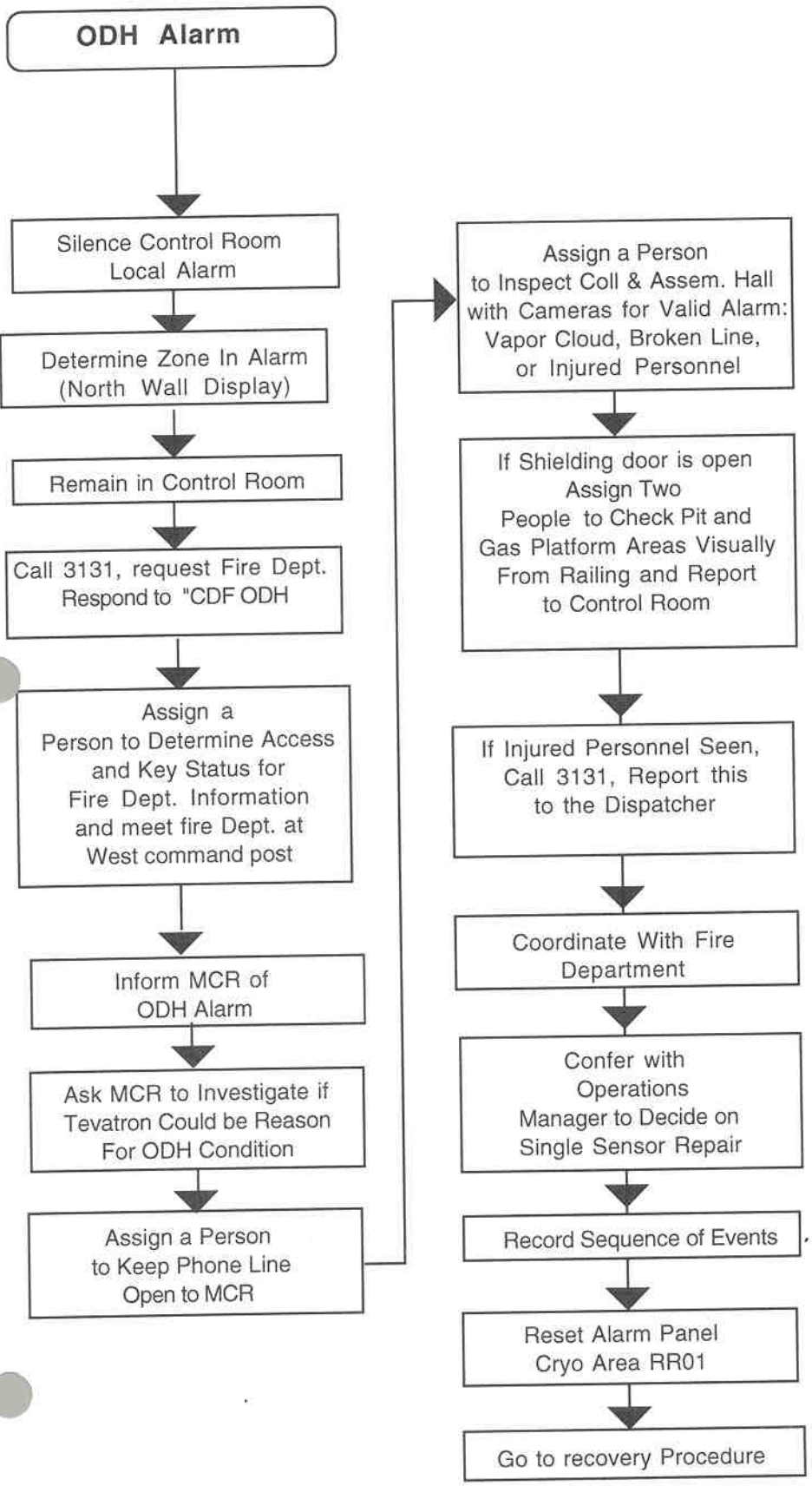
Building Evacuate Alarm, Building Evacuate Strobe, Assembly Pit Vent. Purge, Status Panels Display, Assembly Pit ODH Alarm

Feb. 9, 2001

WARNING: Do Not Enter Deep Pit or Coll. Hall

CDF ODH Alarm

Collision Hall or Assembly Building with 1200 Ton Shield Door Open



Expert Investigators can do the following:

Check Alarm at Cryo Area Rack #1

Investigate Further:
1. Check for Other Alarms
2. Determine if Recent Changes are Cause From Fix
3. Have Person Check PF1,
4. Have Person Check Cryo Syst Readbacks

Alarm is Valid if any of the following are true:
1. Vapor Cloud or Broken Line Seen
2. More than One Sensor Indicates Latched Alarm
3. Latched Sensor Non-Normal Reading Persists
4. All Access Keys Cannot Be Accounted For (Unless Assembly Pit is Not Part of Access Area)

If Valid Alarm is Only One Non-Normal Sensor And No Other Confirming Evidence is Found, Alarm is Declared False

Automatic Actions:

Building Evacuate Alarm, Building Evacuate Strobe, Assembly Pit Vent. Purge, Status Panels Display, Assembly Pit ODH Alarm

Feb. 9, 2001

CDF Radiation Exposure

Receive Report of Exposure

Advise the Detention of Anyone Possibly Exposed

Call 3131, Report Radiation Exposure

If Possible Dispatch a Person to Advise Others to Keep Out of the Area, But do not enter area

Inform RSO and SSO of the Exposure

Notify Personnel on the PPD/ Emergency Call List and CDF Operations Manager

Document Pertinent Operations Information for Exposure

Await instructions from the Division Head

Have MCR Disable Beam to Area if appropriate

The RSO is
T.J. Sarlinal
Ex 3299

The SSO is
Martha Heflin
3511

Feb. 9, 2001

CDF Spill Procedures

Spill of Detector
Cooling Fluid
Reported

↓

Small quantities
(< 55 Gallons)
Can be absorbed
but must be disposed
of as special waste.
For larger spills
call 3131
See MSDS Sheets
Next Pages

↓

Notify
Operations Manager
CDF spill plan is behind
MSDS Sheets

↓

When 'All Clear' is
Given Notify
People on the
Notification Call List

Feb. 9, 2001

ETHYLENE GLYCOL AND PROPYLENE GLYCOL SPILL PLAN FOR CDF

Keith Schuh 8/14/00
(Updated Keith Schuh 2/6/01)

The following general rules should be followed in the event of a spill/release:

1. Alert other occupants and evacuate area if necessary.
2. Dial 3131 if the size of the spill or nature of the spilled material makes it readily apparent that the situation cannot be safely stabilized using locally available resources (personnel and equipment). Do this from a safe location.
3. First Aid Measures

   Inhalation:
   Remove to fresh air. Not expected to require first aid measures.
   Ingestion:
   Ethylene Glycol:
   Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.
   Propylene Glycol:
   Not expected to require first aid measures. Give several glasses of water to drink to dilute. If large amounts were swallowed, get medical advice.
   Skin Contact:
   Remove any contaminated clothing. Wash skin with soap and water for at least 15 minutes. Follow up with medical care to be sure irritation does not develop.
   Eye Contact:
   In case of contact, immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Follow up with medical care to be sure eyes have been properly irrigated and eye infection is not present.
4. Read the attached MSDS Sheets. Avoid skin contact, **Do Not Heat** this material, it can burn and produce poisonous gases.
5. Control accesses to the spill area and, if possible without risking injury, control the source of the spill and limit the spread of contamination. Prevent releases to the environment (sanitary sewer, sinks, drains, storm sewer system, or the ground) but do not jeopardize personal safety to do so. If it gets into a drain document approximately how much went into the system and which drain it went down.
6. Recover as much of the spilled material as possible. Wear rubber gloves and additional PPE as needed. These types of Glycol can be absorbed with vermiculite, dry sand, or rags.
7. Calculations have shown that this material should not be radioactive until well after the year 2005. However, if this product must be disposed of, the waste generator will be sure appropriate sampling and waste characterization is performed.
8. Notify the PPD SSO, EPO, and ES&H Section Head of any potentially reportable incidents as soon as possible.

The following is a call list for notification.

TJ Sarlina (SSO) x3299
Martha Heflin (EPO) x3511

Keith Schuh x4575
Jeff Spalding x 4272 Nigel Lockyer x 2685
Pat Lukens x8053 or Rob Roser x5006

CDF Severe Weather ALARM PROCEDURE

When Warning is Issued
Pause the Run
Turn off Detector High
Voltage using FIX Display

↓

Take Emergency Pager

↓

Proceed Immediately
to the Tornado
Shelter in Stairwell

↓

When 'All Clear' is
Given Notify
People on the
Notification Call List
if Necessary

Feb. 9, 2001

Warning: Experts with MX241 or COM26 Monitor and Escape Pack should First Enter Pit After ODH False Alarms

CDF RECOVERY

Recovery from
Flam. Gas Low Level Alarm
COT Inert Monitor
VESDA Pre_Alarm

↓

Contact CDF Operations Manager to Identify and Authorize System Experts to Correct Problem, Restart Shut Down Systems, and Notify Call List Personnel

↓

For Flammable Gas Low Level Alarm, CDF Operations Manager May Authorize Gas Tech to Repair Problem as per CDF-313 as Long as No Dual Function Gas Monitors Signal Alarm

↓

Record Actions in Logbook

↓

Resume Normal Operations

Recovery from False Alarms:
Fire Alarm
Flamm. Gas Alarm
ODH Alarm

↓

Contact CDF Operations Manager to Identify and Authorize System Experts to Correct Problem, Restart Shut Down Systems, and Notify Call List Personnel

↓

Record Actions in Logbook

↓

Notify MCR that Alarm was False

↓

Resume Normal Operations

Recovery from Emergencies:
Fire Alarm
Flamm. Gas High Level Alarm
ODH Alarm

↓

Contact CDF Operations Manager to Identify and Authorize System Experts to Correct Problem, Restart Shut Down Systems, and Notify Call List Personnel

↓

CDF Head Consults with Beams And PPD Heads and Authorizes Normal Operations

↓

Record Actions in Logbook

↓

Notify MCR of Incident Termination and Resumption of Normal Operations

↓

Resume Normal Operations

Feb. 9, 2001